

### Abstract

A low-voltage wide band micro electrical mechanical (MEM) switch. The low-voltage MEM switch comprises a contact bridge. A microstrip has an impedance of about 50 Ohms, first and second portions, and a gap defined between the first and second portions. A cantilever arm supports the contact bridge. The cantilever arm has an end portion, an open state, and a closed state. The contact bridge is spaced from the microstrip at a distance of about 12  $\mu\text{m}$  or greater when the cantilever arm is in the open state. The contact bridge provides electrical communication between the first and second portions of the microstrip when the cantilever arm is in the closed state. An electrically conductive coil opposes the first end, wherein the electrically conductive coil moves the cantilever arm from the open state to the closed state when a voltage of about 5 Volts or less are applied across the electrically conductive coil. A housing encloses the cantilever arm, microstrip, and electrically conductive coil. The housing has a height of about 5 mm or less, and the housing is not necessary hermetically sealed.